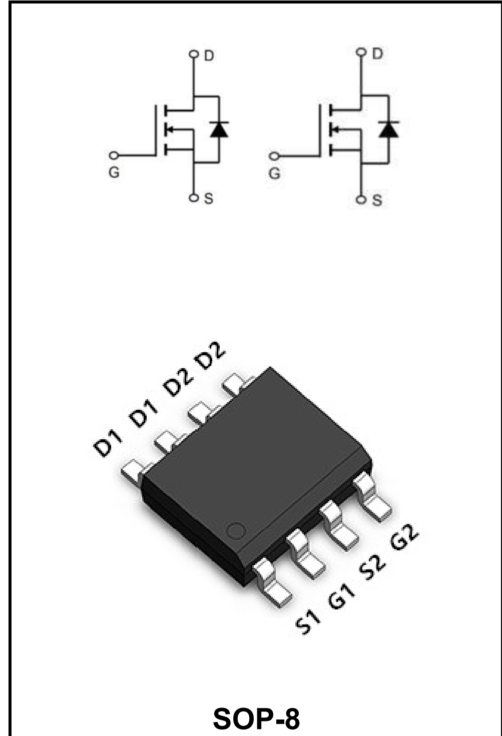
100V N+N-CHANNEL ENHANCEMENT MODE MOSFET

MAIN CHARACTERISTICS

I_D	8.3A
V_{DSS}	100V
R_{DSON}-typ(@V_{GS}=10V)	< 120mΩ(Type:100 mΩ)



Application

- Lithium battery protection
- Wireless impact
- Mobile phone fast charging

Product Specification Classification

Part Number	Package	Marking	Pack
YFW8H10S	SOP-8	YFW 8H10S XXXXX	3000PCS/Tape

Maximum Ratings at Tc=25°C unless otherwise specified

Characteristics	Symbols	Value	Units
Drain-Source Voltage	VDS	100	V
Gate - Source Voltage	VGS	±20	V
Drain Current, V_{GS} @ 10V @T_C=25℃	I_D	8.3	A
Drain Current, V_{GS} @ 10V @T_C=100℃	I_D	6.5	A
Pulsed Drain Current[1]	I_{DM}	24.3	A
Total Power Dissipation @T_C=25℃	P_D	1.5	W
Single Pulse Avalanche Energy[4]	E_{AS}	6.1	mJ
Storage Temperature Range	T_{STG}	-55 to +150	°C
Operating Junction Temperature Range	T_J	-55 to +150	°C
Maximum Thermal Resistance, Junctionambient	$R_{θJA}$	85	°C/W
Maximum Thermal Resistance, Junction-case	$R_{θJC}$	8.1	°C/W

Maximum Ratings at Tc=25°C unless otherwise specified

Characteristics	Test Condition	Symbols	Min	Typ	Max	Units
Drain-Source Breakdown Voltage	V_{GS}=0V, I_D=250uA	V(BR)DSS	100	107	-	V
Zero Gate Voltage Drain Current	V_{DS}=100V, V_{GS}=0V	I_{DSS}	-	-	1.0	μA
Gate to Body Leakage Current	V_{GS}=±20V, V_{DS}=0V	I_{GSS}	-	-	±100	nA
Gate -Threshold Voltage	V_{DS}=V_{GS}, I_D=250uA	$V_{GS(th)}$	1.0	1.6	2.5	V
Static Drain-Source On-Resistance note3	V_{GS}=10V, I_D=10A	$R_{DS(ON)}$	-	100	120	mΩ
	V_{GS}=4.5V, I_D=8A		-	115	135	mΩ
Input Capacitance	V_{DS}=25V V_{GS}=0V f=1.0MHz	C_{iss}	-	610	-	pF
Output Capacitance		C_{oss}	-	40	-	
Reverse Transfer Capacitance		C_{rss}	-	25	-	
Total Gate Charge	V_{DS}=30V I_D=10A V_{GS}=10V	Q_g	-	12	-	nC
Gate-Source Charge		Q_{gs}	-	2.2	-	
Gate-Drain(“Miller”) Charge		Q_{gd}	-	2.5	-	
Turn-on delay time	V_{DS} =30V I_D= 5A R_{GEN} = 1.8Ω V_{GS}=10V	$t_{d(on)}$	-	7	-	ns
Turn-on Rise Time		T_r	-	5	-	
Turn-Off Delay Time		$t_{d(OFF)}$	-	16	-	
Turn- Off Fall Time		t_f	-	6	-	
Continuous Source Current1,5	VG=VD=0V , Force Current	I_S	-	-	10	A
Pulsed Source Current2,5		I_{SM}	-	-	40	A
Diode Forward Voltage2	V_{GS}=0V , I_S=10A	V_{SD}	-	-	1.2	V
Body Diode Reverse Recovery Time	I_F=10A,dI/dt=100A/μs	t_{rr}	-	21	-	ns
Body Diode Reverse Recovery Charge		Q_{rr}	-	21	-	nC

Notes:

1、The data tested by surface mounted on a 1 inch 2 FR-4 board with 2OZ copper.

2、The data tested by pulsed , pulse width ≤ 300us , duty cycle ≤ 2%

3、The EAS data shows Max. rating . The test condition is VDD =80V,VGS =10V,L=0.1mH,IAS =3A

4、The power dissipation is limited by 150℃ junction temperature

5、The data is theoretically the same as ID and IDM , in real applications , should be limited by total power dissipation

Ratings and Characteristic Curves

Typical Characteristics

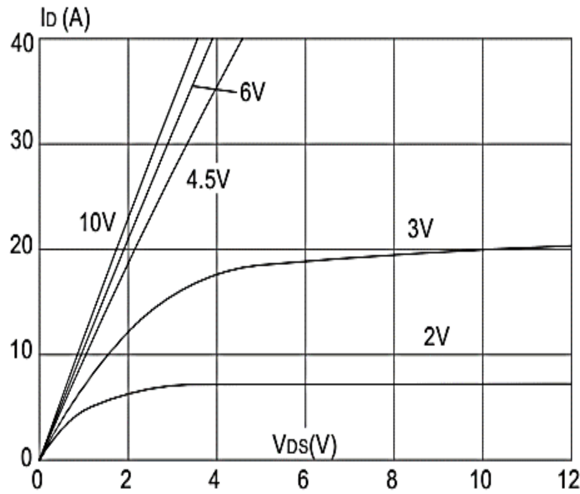


Figure1: Output Characteristics

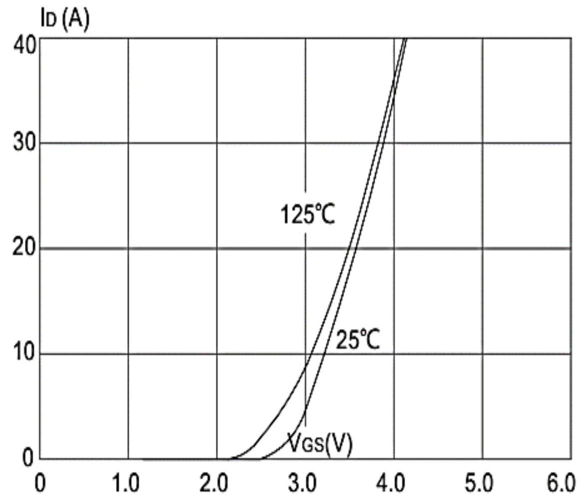


Figure 2: Typical Transfer Characteristics

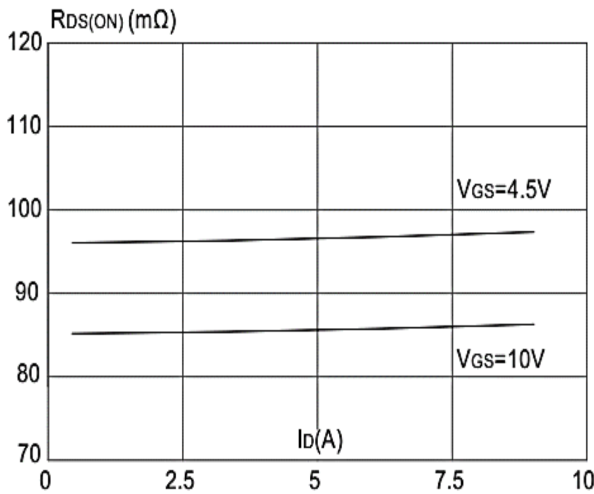


Figure 3:On-resistance vs. Drain Current

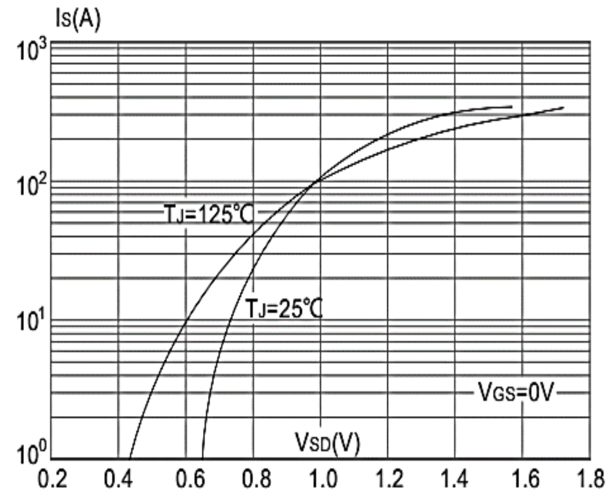


Figure 4: Body Diode Characteristics

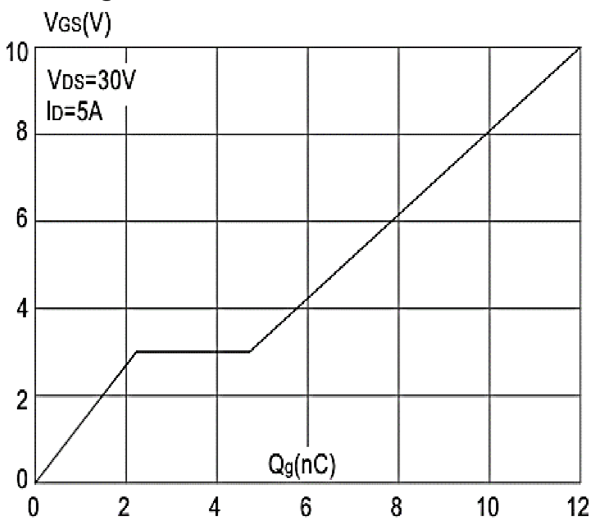


Figure 5: Gate Charge Characteristics

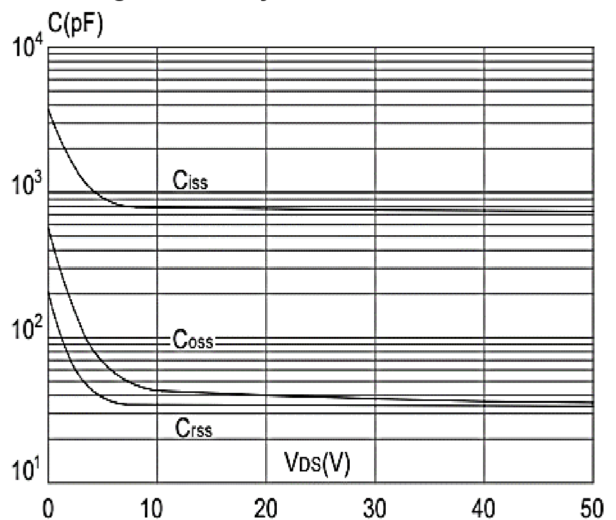


Figure 6: Capacitance Characteristics

Ratings and Characteristic Curves

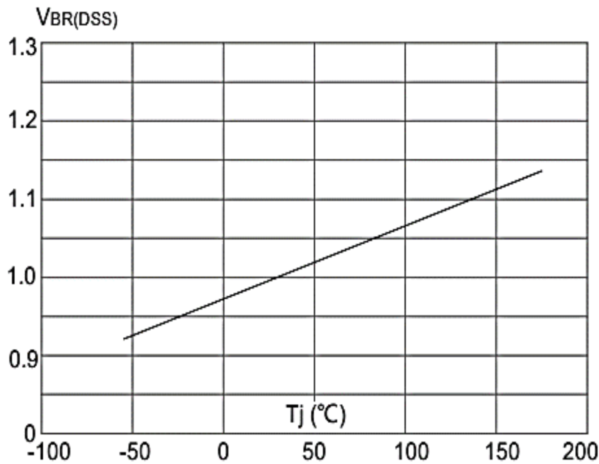


Figure 7: Normalized Breakdown Voltage vs Junction Temperature

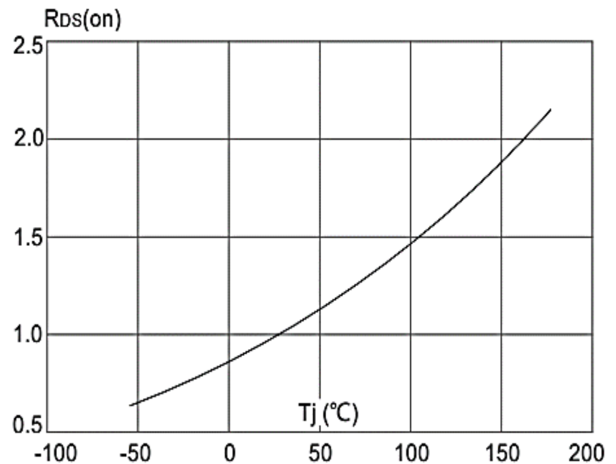


Figure 8: Normalized on Resistance vs. Junction Temperature

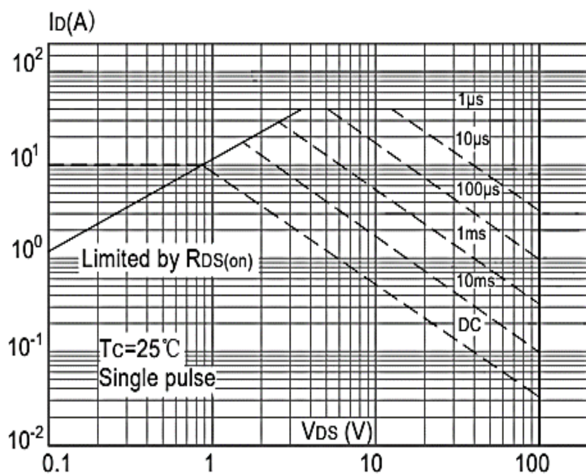


Figure 9: Maximum Safe Operating Area

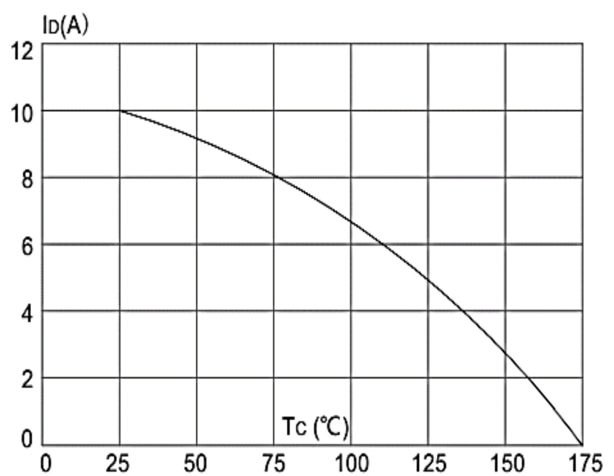


Figure 10: Maximum Continuous Drain Current vs. Ambient Temperature

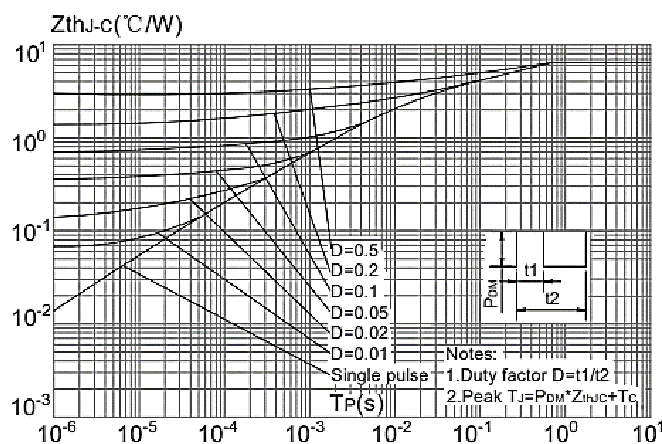
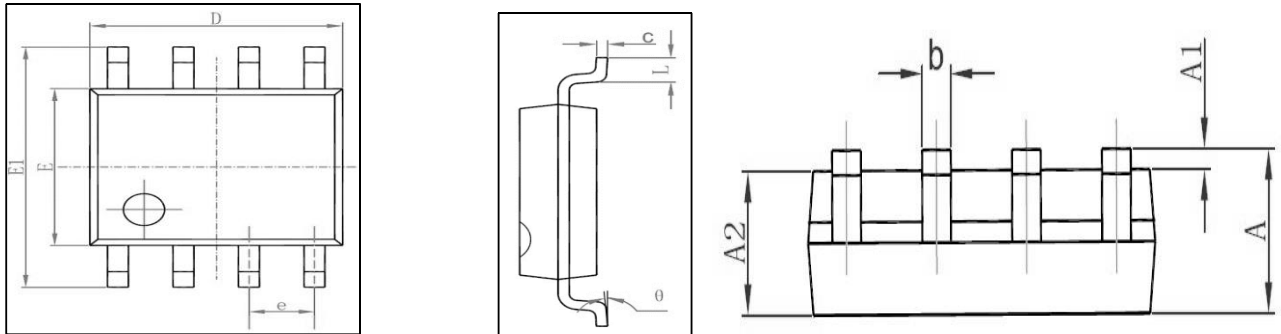


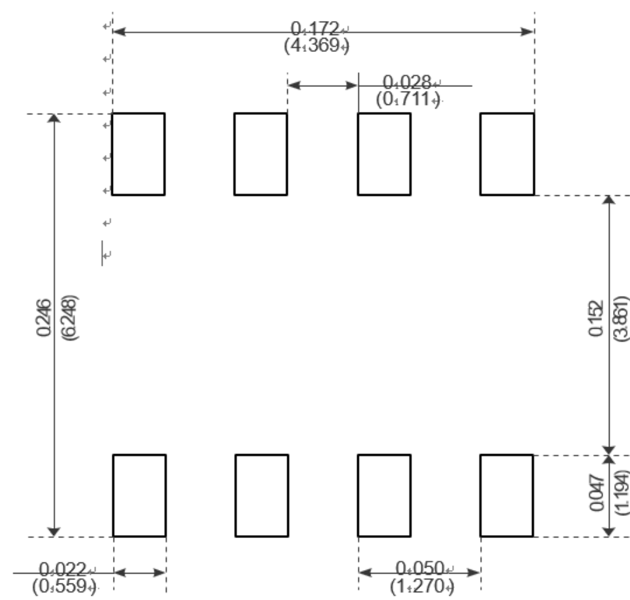
Figure.11: Maximum Effective Transient Thermal Impedance, Junction-to-Ambien

Package Outline Dimensions Millimeters

SOP-8



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.350	1.750	0.053	0.069
A1	0.100	0.250	0.004	0.010
A2	1.350	1.550	0.053	0.061
b	0.330	0.510	0.013	0.020
c	0.170	0.250	0.006	0.010
D	4.700	5.100	0.185	0.200
E	3.800	4.000	0.150	0.157
E1	5.800	6.200	0.228	0.244
e	1.270 (BSC)		0.050 (BSC)	
L	0.400	1.270	0.016	0.050
θ	0°	8°	0°	8°



Recommended Minimum Pads